Biospheric Sciences Branch Highlights
May-June 2001

** Second Landsat Data Continuity Mission Workshop

A second workshop on the Landsat Data Continuity Mission (LDCM) was held on April 23 - 24 in St. Louis, MO, in conjunction with the American Society of Photogrammetry and Remote Sensing (ASPRS) Annual Meeting. The workshop was a public forum held as a follow-up to an initial LDCM workshop conducted in January at USGS HQ in Reston, VA. The main objectives were to review revisions to an LDCM Data Specification, to solicit feedback on the revisions, and to present expectations for an LDCM request for procurement from NASA and its partner in the Landsat program, the USGS. Ninety-eight people registered for the workshop and the audience was weighted towards aerospace industry representatives. The data specification revisions met with general approval although a number of missing pieces were identified. The public discussion was rather muted, but greater interest and intensity was expressed in a subsequent sequence of meetings between representatives of potential bidders and the NASA / USGS LDCM formulation team.

** Imhoff presents "Remote Sensing/Carbon Cycle Science in the Context of the Kyoto Protocol"

Dr. Marc Imhoff gave an invited plenary talk at the Xth Brazilian Remote Sensing Symposium in Foz do Iguacu, Brazil, April 25th on "Remote Sensing tools for Carbon Cycle Science in the Context of the Kyoto Protocol or Carbon Related International Treaties". The talk was attended by the head of the Brazilian Space Agency, Diane Wickland, the Code Y NASA Headquarters Program Manager, and scientists and policy makers from around the world. The talk was well received as it discussed tools for measuring carbon sources and sinks which could be used for both science investigations and treaty compliance. Imhoff covered a suite of NASA EOS, ESSP, and international sensors including laser, multi-spectral, and radar based systems for terrestrial, marine, and atmospheric applications.
Dr. Imhoff also discussed the importance of low frequency radar systems for future scientific investigations siting his own research and that of others working in that new and developing field. No politics of the KP were discussed.

** Third Carbon Cycle Initiative Workshop held

The NASA Carbon Cycle Initiative Team held its third workshop, May 2-4, at the UMD Conference Center. The goals of the workshop were to review the proposed NASA activities to support the observational requirements defined in the first two workshops and discuss estimated costs and priorities. These observational requirements include atmospheric CO2 concentrations, land

biomass and productivity, and air-sea CO2 fluxes. The activities defined in the second workshop included technology development leading to new missions and science support for achieving research goals. The research goals include i) quantifying global carbon sources and sinks ii) understanding processes underlying global carbon fluxes and iii) predicting carbon fluxes given future global change scenarios. The workshop was attended by members of the carbon science community and representatives from various NASA Centers, from NASA HQ staff (Wickland, Gutman, Chatfield) and from other Federal Agencies (NOAA, DOE) for a total of about 60 people. Candidate science missions and associated costs and timelines for support and development were discussed. The next step in the Initiative Planning is to develop a presentation to NASA HQ management.

**** SAFARI 2000 Planning Meeting, 30-31 May 2001**

About 30 international investigators of the SAFARI 2000 experiment participated in a Status Review and Planning Meeting at GSFC. This was the first major review since the wet and dry season campaigns of 2000. Data analysis, particularly validation work for EOS Terra, has increased significantly in the past 6 months, and thus far MODIS and MISR products have performed exceptionally well (given that the wet season campaign began simultaneously with Terra's "First Light"). The very active fire season in 2000 provided good opportunties for atmospheric science; early results indictate heretofore unseen products of biomass combustion. Plans and needs to synthesize data and conduct cross-discipline studies were addressed, and will be expanded at the SAFARI Meeting in Zambia this August. The first CDROM, featuring AVHRR, SeaWiFS and climatology data, is under development at NASA's GSFC and should be disseminated by August. Other data are available through EOS DAACs, ESIPs, and investigator websites. SAFARI special issues of J. Arid Environ. and Global Change Biol. are in review. Special sessions of IGBP and AGU meetings will be convened later in the year.

**** Workshop for Validation of Satellite-derived Leaf Area Index (LAI) products**

More than 20 scientists representing 10 countries met on 7-8 June 2001 in Frascati, Italy for the first workshop dedicated to the validation of satellite-derived Leaf Area Index (LAI) products. Workshop participants were charged with 1) subjectively assessing current LAI products on a biome-by-biome basis, and 2) developing guidelines outlining the present "best practice" protocols for field data collection, analysis and LAI product evaluation. The group also outlined research priorities, and made plans to collaboratively evaluate the accuracy of the reprocessed MODIS LAI product at 24 test sites for which field data were collected during MODIS operations.

The Workshop, co-chaired by Jeff Privette and Jeff Morisette of Code 923, was the first topical workshop of the Subgroup on Land Product Validation (LPV) of the CEOS Working Group on Calibration and Validation (WGCV). The LPV Subgroup was chartered in 2000 to establish standard guidelines and protocols and to foster data and information exchange relevant to validation. It grew from the activities of the MODLAND validation team at NASA's GSFC.

**** GSFC Program level review of proposed Deep Space and Lunar Calibration Maneuvers for the Terra spacecraft**

A GSFC program level review of the proposed Deep Space and Lunar Calibration Maneuvers for the Terra spacecraft was held on June 13. Jon Ranson (Code 923), Terra Project Scientist, and John Teter, Terra Engineering Manager made a joint presentation of the science rationale and spacecraft plans and risks to a group of GSFC engineers and scientists. Attendees included Code Y Chief Engineer Tom Magner, Code Y Research Director Jack Kaye, Code Y Terra Program Scientist Diane Wickland, GSFC EOS Senior Project Scientist Michael King, Code 900 Chief Scientist Mark Schoeberl, EOS-Goddard Program Manager Chris Scolese, Code 730 Engineer Paul Westmeyer, Earth Science Missions Operations Manager Paul Ondrus, Earth Science Missions Operations Deputy Manager, Ken Dolan, and Terra Flight Operations Manager, Bob Kozon. There was general agreement among the participants that the proposed maneuvers were scientifically important and safe for the spacecraft and instruments. The next step in the process is to brief GSFC and Code Y top level management. After final go-ahead approval is obtained it is anticipated that an additional two-months of planning and simulations will be required. It is expected that all five Terra instrument teams will be represented at GSFC for the actual maneuvers.

**** Ranson guest scientist at Step Star Network's Young Astronaut program**

Jon Ranson was a guest scientist on Step Star Network's Young Astronaut program on April 23, 2001. The Young Astronaut program is a space oriented educational course given to 4th-6th graders via live television hook up in their classrooms. Ranson presented information and results from the EOS Terra Mission and answered student's questions during the half hour broadcast.

**** Landsat Web site selected by National Science Teachers Organization**

The following Landsat Web page was selected by the sciLINKS program--a service of the National Science Teachers Association--to appear as a resource link in sciLINK textbooks. The purpose is to provide added resources and

content to supplement the text book information. The Landsat web page was selected by a team of teachers who reviewed it using a stringent set of criteria that ensure selected materials have accurate content and effective pedagogy.

http://www.gsfc.nasa.gov/gsfc/earth/landsat/sprawl.htm

Many teachers are taking advantage of the Internet to show their students materials that enhance or extend the content covered in the curriculum. The sciLINKS program believes that by utilizing textbooks as a portal to good online content, more teachers and students can be reached than is possible with the traditional search engine or pointer web site. A direct connection from a concept on the textbook page to materials exploring that concept in cyberspace leads readers to the kinds of materials our professional educators believe work best in the classroom.